Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A lens-integrated optical fiber, comprising:

an optical fiber including a core and a clad;

a lens mounted on an end face of the core at an end face of the optical fiber;

the lens being formed so that the maximum width d_2 of the maximum cross section S_1 of the lens is greater than the maximum width d_1 of the end face of the optical fiber, where the maximum cross section S_1 is the cross section of the lens cut by a plane that is parallel with the an end face of the optical fiber and that makes the cross sectional area of the lens greatest; and

the core being uncladded at an end of the optical fiber.

2. (Canceled)

3. (Previously Presented) The lens-integrated optical fiber according to claim1,

the end face of the core differing from an end face of the clad in height at the end of the optical fiber; and

the core and the clad forming a protrusion at an end of the optical fiber.

4-5. (Canceled)

6. (Currently Amended) The lens-integrated optical fiber according to claim ~~2~~1,

a refractive index of the lens being substantially equal to a refractive index of the core.

7. (Previously Presented) The lens-integrated optical fiber according to the claim 1,

a surrounding of the core being covered with a sealing agent at the end of the optical fiber.

8. (Original) The lens-integrated optical fiber according to claim 7,

the refractive index of the lens being greater than a refractive index of the sealing agent, and the refractive index of the sealing agent being substantially equal to the refractive index of the clad.

9. (Currently Amended) ~~The~~ A lens-integrated optical fiber ~~according to the claim 1,~~ comprising:

an optical fiber including a core and a clad;

a lens mounted on an end face of the core at an end face of the optical fiber;

the lens being formed so that the maximum width d_4 of the maximum cross section S_2 of the lens is greater than the maximum width d_3 of the end face of the core, where the maximum cross section S_2 is the cross section of the lens cut by a plane that is parallel with the end face of the core and that makes the cross section area of the lens greatest; and

the core being uncladded at the end of the optical fiber.

10. (Canceled)

11. (Original) The lens-integrated optical fiber according to claim 10,

the core and the clad forming a recess at the end of the optical fiber.

12. (Original) The lens-integrated optical fiber according to claim 1,

the lens being formed by curing a liquid material that is curable by applying energy to the liquid material.

13. (Original) The lens-integrated optical fiber according to claim 12,

the lens being made of ultraviolet-cured resin.

14. (Original) An optical module, comprising:

the lens-integrated optical fiber according to claim 1;

an optical element having an optical part; and

a semiconductor chip electrically connected to the optical element.

15. (Original) An optical transmission apparatus, comprising:

the lens-integrated optical fiber according to claim 1;

a light emitting element placed while directing a light emitting part of the light emitting element to one end face of the optical fiber;

a semiconductor chip electrically coupled to the light emitting element and packaged together with the light emitting element;

a light receiving element that is placed while directing a light receiving part of the light receiving element to the other end face of the optical fiber; and

a semiconductor chip electrically coupled to the light receiving element and packaged together with the light receiving element.

16. (Previously Presented) A method to produce a lens-integrated optical fiber, comprising:

(a) forming a lens precursor on the end face of the optical fiber by discharging a liquid drop on the end face of the optical fiber; and

(b) forming a lens by curing the lens precursor,

the lens being formed so that the maximum width d_2 of the maximum cross section S_1 of the lens is greater than the maximum width d_1 of the end face of the optical fiber, where the maximum cross section S_1 is the cross section of the lens cut by a plane that is parallel with the end face of the optical fiber and that makes the cross section area of the lens greatest;

(c) forming the end of the optical fiber so that the end face of the core differs in height from the end face of the clad, prior to (a) and (b);

removing the clad around the core at the end of the optical fiber; and

extending the core at the end of the optical fiber.

17. (Previously Presented) A method to produce a lens-integrated optical fiber, comprising:

(a) forming a lens precursor on the end face of the core by discharging a liquid drop on the end face of the core, at an end of an optical fiber including a core and a clad; and

(b) forming a lens by curing the lens precursor;

(c) forming the end of the optical fiber so that the end face of the core differs in height from the end face of the clad, prior to (a) and (b);

removing the clad around the core at the end of the optical fiber; and

extending the core at the end of the optical fiber.

18-20. (Canceled)

21. (Previously Presented) The method to produce a lens-integrated optical fiber according to the claim 17, further comprising:

(d) covering a surrounding of the core with a sealing agent.

22. (Previously Presented) The method to produce a lens-integrated optical fiber according to the claim 21, the lens being formed so that the maximum width d_4 of the maximum cross section S_2 of the lens is greater than the maximum width d_3 of the end face of the core, where the maximum cross section S_2 is the cross section of the lens cut by a plane that is parallel with the end face of the core and that makes the cross section area of the lens greatest.

23. (Canceled)

24. (Original) The method to produce a lens-integrated optical fiber according to claim 16, an inkjet method being used to discharge the liquid drop.

25. (Original) The method to produce a lens-integrated optical fiber according to claim 16, the lens precursor being cured by applying energy to the lens precursor.

26. (Original) The method to produce a lens-integrated optical fiber according to claim 25:

the lens precursor being made of ultraviolet-cured resin, the energy being ultraviolet light, and the lens precursor is cured by the ultraviolet light, incident into the end face of the core at one end of the optical fiber, propagates in the core, exits from the other end of the optical fiber, and irradiates the lens precursor.

27. (Previously Presented) A lens-integrated optical fiber, comprising:

an optical fiber including a core and a clad;

a lens mounted on an end face of the core at an end face of the optical fiber;

the lens being formed so that the maximum width d_2 of the maximum cross section S_1 of the lens is greater than the maximum width d_1 of the end face of the optical fiber, where the maximum cross section S_1 is the cross section of the lens cut by a plane that is parallel with the end face of the optical fiber and that makes the cross sectional area of the lens greatest;

the end face of the core is higher than the end face of the clad at the end of the optical fiber.